

ABSTRACT

**DISK DRIVE APPARATUS, HEAD POSITION CONTROL METHOD,
AND HARD DISK DRIVE**

A position control system for a magnetic head improves servo tracking characteristics in a low frequency range without impairing the stability of seek operations. The position control system is equipped with two integrators: a first integrator 43 and second integrator 45. The gain $K3'$ of the second integrator 45 is set larger than the gain $K3$ of the first integrator 43. The first integrator 43 plays the role of offsetting the bias force acting on the magnetic head while the second integrator 45 plays the role of improving the servo tracking characteristics in the low frequency range.